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(54) Circuit for cutting off abnormal power

Abstract

1. Technical field pertinent to the invention set forth in claims

The present invention relates to a power circuit.

2. Technical problems to be solved by the invention

There is provided a circuit for cutting off abnormal power, capable of cutting off the abnormal power supply to prevent a device from being damaged due to continuous inflow of the abnormal power to the device and allowing the device to automatically recover upon application of normal power and of continuously monitoring the input power to display an alarm when the abnormal power is applied to the device.

3. Gist of the method of solving the technical problems

A circuit for monitoring, cutting off and recovering input power to protect a device in which the input power is used as driving power of the device comprises a first sensing unit which includes an unit for detecting a first set voltage and generates a first sense signal when the input power is higher than the first set voltage; a second sensing unit which includes an unit for detecting a second set voltage lower than the first set voltage and generates a second sense signal when the input power is lower than the second set voltage; a relay driving unit which is connected to the first and second sensing units, includes an auxiliary power supply means and generates a driving voltage when the first and second sense signals are inputted thereto; and a relay switching unit for cutting off the supplied input power by blocking a power supply path to the device, by means of the relay driving unit, when the first and second sense signals are generated.

4. Key use of the invention

The invention embodies a circuit for monitoring input power and automatically cutting off and recovering the power when the input power is abnormal.

Representative figure

Fig. 2

Specifications

[Title]

Circuit for cutting off abnormal power

[Brief Description of the Drawings]

Fig. 2 shows a circuit for cutting off abnormal power according to the present invention.

(57) Claim

1. A circuit for cutting off and recovering input power while monitoring the input power to protect a device in which the input power is used as driving power of the device, comprising:

a first sensing means including a means for detecting a first set voltage and generating a first sense signal when the input power is higher than the first set voltage;

a second sensing means including a means for detecting a second set voltage lower than the first set voltage and generating a second sense signal when the input power is lower than the second set voltage;

a relay driving means connected to the first and second sensing means, including an auxiliary power supply means, and generating a driving voltage when the first and second sense signals are inputted thereto; and

a relay switching means for cutting off the supplied input power by blocking a power supply path to the device by means of the relay driving means, when the first and second sense signals are generated.

2. The circuit as claimed in claim 1, further comprising:

a display means connected to the relay switching means for indicating, when the path is blocked, that the input power is abnormal.

3. The circuit as claimed in claim 1 or 2, wherein the relay switching means comprises:

a switching terminal connected with an input power supply and having a relay switch;

a normal contact terminal connected with the device and brought into contact with

the relay switch when normal power is applied; and

a normal open terminal connected with the display means and brought into contact with the display means by means of the relay driving means when abnormal power is applied.

4. A circuit for cutting off and recovering input power while monitoring the input power to protect a device in which the input power is used as driving power of the device, comprising:

a first sensing means including a first constant voltage means, a means for detecting a first set voltage and a first comparing means, and generating a first sense signal when it is determined by the first comparing means that rectified input power is higher than the first set voltage;

a second sensing means including a second constant voltage means, a means for detecting a second set voltage and a second comparing means, and generating a second sense signal when it is determined by the second comparing means that the rectified input power is lower than the second set voltage;

a relay driving means connected to the first and second sensing means, including an auxiliary power supply means, and generating a driving voltage when the first and second sense signals are inputted thereto;

a relay switching means for cutting off the supplied input power by blocking a power supply path to the device, by means of the relay driving means, when the first and second sense signals are generated; and

a display means connected to the relay switching means for indicating, when the path is blocked, that the input power is abnormal.

5. The circuit as claimed in claim 4, wherein the relay switching means comprises:

a switching terminal connected with an input power supply and having a relay switch;

a normal contact terminal connected with the device and brought into contact with the relay switch when normal power is applied; and

a normal open terminal connected with the display means and brought into contact with the display means by means of the relay driving means when abnormal power is applied.

6. The circuit as claimed in claim 4, wherein the second set voltage is equal to or lower than the first set voltage.